

What is claimed is:

1. An optical module, comprising:
an active optical component;
an optical fiber arranged with respect to the active optical component to be capable of propagating light along an optical path between the active optical component and the optical fiber;
a beam shaping optical component located in the optical path between the optical fiber and the active optical component; and
a positioning device for moving at least one of the beam shaping optical component with respect to the optical fiber, the beam shaping optical component with respect to the active optical component, and the active optical component with respect to the optical fiber.
2. An optical module according to claim 1, wherein the active optical component comprises a laser.
3. An optical module according to claim 1, wherein the active optical component comprises one of an edge emitting laser and a vertical emitting laser.
4. An optical module according to claim 1, wherein the active optical component comprises a detector.
5. An optical module according to claim 1, wherein the beam shaping optical component includes a lens.
6. An optical module according to claim 1, wherein:
the optical module additionally comprises a frame to which the optical fiber and the beam shaping optical component are affixed; and

the positioning device comprises a micro-machined movable stage affixed between the frame and the active optical component.

7. An optical module according to claim 1, wherein:
the optical module additionally comprises a frame to which the optical fiber and active optical component are affixed; and
the positioning device comprises a micro-machined movable stage affixed between the frame and the beam shaping optical component.

8. An optical module according to claim 1, wherein:
the optical module additionally comprises a frame to which the beam shaping optical component and active optical component are affixed; and
the positioning device comprises a micro-machined movable stage affixed between the frame and the optical fiber.

9. An optical module according to claim 1, wherein:
the optical module additionally comprises a frame to which the optical fiber is affixed;
the positioning device comprises a first micro-machined movable stage affixed between the frame and the active optical component; and
the positioning device additionally comprises a second micro-machined movable stage affixed between the frame and the beam shaping optical component.

10. An optical module according to claim 1, wherein:
the optical module additionally comprises a frame to which the active optical component is affixed;
the positioning device comprises a first micro-machined movable stage affixed between the frame and the optical fiber; and

the positioning device additionally comprises a second micro-machined movable stage affixed between the frame and the beam shaping optical component.

11. An optical module according to claim 1, wherein:
the optical module additionally comprises a frame to which the beam shaping optical component is affixed;
the positioning device comprises a first micro-machined movable stage affixed between the frame and the active optical component; and
the positioning device additionally comprises a second micro-machined movable stage affixed between the frame and the optical fiber.

12. An optical module according to claim 1, wherein the optical module additionally comprises means for holding the positioning device in position.

13. An optical module according to claim 12, wherein the means for holding comprises a position memory circuit operable to control the positioning device.

14. An optical module according to claim 12, wherein the means for holding comprises solder.

15. An optical module according to claim 14, wherein the means for holding additionally comprises a micro heater capable of melting the solder.

16. An optical module according to claim 12, wherein the means for holding comprises an adhesive.

17. An optical module according to claim 16, wherein the means for holding additionally comprises a micro heater capable of activating the adhesive.

AT 10030542-1

18. An optical module according to claim 16, wherein the adhesive is capable of activation by exposure to one of ultraviolet radiation and RF radiation.

19. An optical module according to claim 16, further comprising a position memory circuit operable to control the positioning device.

20. A method of making an optical module comprising:
assembling an active optical component, an optical fiber arranged with respect to the active optical component to be capable of propagating light along an optical path between the active optical component and the optical fiber, a beam shaping optical component located in the optical path between the optical fiber and the active optical component, and a positioning device capable of moving one of a pair of elements with respect to the other, the pair of elements comprising one of (a) the beam shaping optical component and the optical fiber, (b) the beam shaping optical component and the active optical component and (c) the active optical component with respect to the optical fiber;
aligning to maximize coupling between the optical fiber and the active optical component; and
holding one of the pair of elements in position with respect to the other after aligning.

21. A method according to claim 20, wherein the holding comprises freezing solder.

22. A method according to claim 20, wherein the holding comprises activating an adhesive.

23. A method according to claim 22, wherein the activating the adhesive comprises exposing the adhesive to at least one of infrared radiation, ultraviolet radiation and RF radiation.

AT 10030542-1

24. A method according to claim 20, further comprising positioning the positioning device according to a position memory circuit.